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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S31 4	306	380/200.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S31 5	304	380/239.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S31 6	269	380/241.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S31 7	1234	380/277.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S31 8	512	380/278.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S31 9	1250	713/189.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S32 0	117	713/192.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:28
S32 1	456	725/114.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:29
S32 2	293	725/115.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:29

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S32 3	559	725/116.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:30
S32 4	57125	(scrambl\$4 or descrambl\$5 or encipher\$4 or cipher\$4 or encrypt\$4) near4 (key or PIN or password)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:32
S32 5	10238	(scrambl\$4 or descrambl\$5 or encipher\$4 or cipher\$4 or encrypt\$4) near4 (key or PIN or password) and (CATV or broadcast\$4 and program\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:32
S32 6	5336	(scrambl\$4 or descrambl\$5 or encipher\$4 or cipher\$4 or encrypt\$4) near4 (key or PIN or password) and (CATV or broadcast\$4 and program\$4) and (control\$4) near3 (data or word)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:33
S32 7	51	S326 and S314	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S32 8	131	S326 and S315	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S32 9	83	S326 and S316	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S33 0	109	S326 and S317	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S33 1	53	S326 and S318	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34

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S33 2	105	S326 and S319	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S33 3	10	S326 and S320	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S33 4	32	S326 and S321	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S33 5	12	S326 and S322	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:34
S33 6	40	S326 and S323	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/06/13 14:36
S33 7	1	(headend and control and data and circuit and integrated and key and descrambl\$4 and (encrypt\$4 or encipher\$4 or cipher\$4) and decrypt\$4 and band and channel). CLM.	US-PGPUB; USPAT	OR	ON	2007/06/13 14:38


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1 [How watermarking adds value to digital content](#)



John M. Acken

July 1998

Communications of the ACM, Volume 41 Issue 7

Publisher: ACM Press

Full text available: pdf(273.94 KB)

 Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

2 [DRM experience: Digital rights management in a 3G mobile phone and beyond](#)



Thomas S. Messerges, Ezzat A. Dabbish

October 2003

Proceedings of the 3rd ACM workshop on Digital rights management DRM '03

Publisher: ACM Press

Full text available: pdf(306.59 KB)

 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

In this paper we examine how copyright protection of digital items can be securely managed in a 3G mobile phone and other devices. First, the basic concepts, strategies, and requirements for digital rights management are reviewed. Next, a framework for protecting digital content in the embedded environment of a mobile phone is proposed and the elements in this system are defined. The means to enforce security in this system are described and a novel "Family Domain" approach to content management ...

Keywords: MPEG-21, copyright protection, cryptography, digital content, digital rights management, embedded system, key management, mobile phone, open mobile alliance, security

3 [Marking and tracing methods: Tamper detection and localization for categorical data using fragile watermarks](#)



Yingjiu Li, Huiping Guo, Sushil Jajodia

October 2004

Proceedings of the 4th ACM workshop on Digital rights management DRM '04

Publisher: ACM Press

Full text available: pdf(150.74 KB)


 Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)


Today, database relations are widely used and distributed over the Internet. Since these data can be easily tampered with, it is critical to ensure the integrity of these data. In this paper, we propose to make use of fragile watermarks to detect and localize malicious alterations made to a database relation with categorical attributes. Unlike other watermarking schemes which inevitably introduce distortions to the cover data, the proposed scheme is distortion free. In our algorithm, all tuple ...

Keywords: database security, fragile watermarking, integrity

4 [Protecting digital media content](#)


Nasir Memon, Ping Wah Wong

July 1998 **Communications of the ACM**, Volume 41 Issue 7
 Publisher: ACM Press
 Full text available:  pdf(1.02 MB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)

- 5 Digital rights management for content distribution
 Qiong Liu, Reihaneh Safavi-Naini, Nicholas Paul Sheppard
 January 2003 **Proceedings of the Australasian information security workshop conference on ACSW frontiers 2003 - Volume 21 ACSW Frontiers '03**
 Publisher: Australian Computer Society, Inc.
 Full text available:  pdf(224.63 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)



Transferring the traditional business model for selling digital goods linked to physical media to the online world leads to the need for a system to protect digital intellectual property. Digital Rights Management(DRM) is a system to protect high-value digital assets and control the distribution and usage of those digital assets. This paper presents a review of the current state of DRM, focusing on security technologies, underlying legal implications and main obstacles to DRM deployment with the ...

Keywords: DRM, digital content



- 6 Software protection: Software piracy prevention through diversity
 Bertrand Anckaert, Bjorn De Sutter, Koen De Bosschere
 October 2004 **Proceedings of the 4th ACM workshop on Digital rights management DRM '04**
 Publisher: ACM Press
 Full text available:  pdf(166.30 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Software piracy is a major concern for software providers, despite the many defense mechanisms that have been proposed to prevent it. This paper identifies the fundamental weaknesses of existing approaches, resulting from the static nature of defense and the impossibility to prevent the duplication of digital data. A new scheme is presented that enables a more dynamic nature of defense and makes it harder to create an additional, equally useful copy. Furthermore it enables a fine-grained cont ...

Keywords: authentication, copyright protection, diversity, identification, intellectual property protection, software piracy prevention, tailored updates

- 7 3d hard copy: Protecting 3d graphics content
 David Koller, Marc Levoy
 June 2005 **Communications of the ACM**, Volume 48 Issue 6
 Publisher: ACM Press
 Full text available:  pdf(2.12 MB),  html (28.23 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The digital rights management problem of protecting data from theft and misuse has been addressed for many information types, including software code, digital images, and audio files. Few technological solutions are designed specifically to protect interactive 3D graphics content. Demand for ways to protect 3D graphical models is significant and growing. Contemporary 3D digitization technologies allow the efficient creation of accurate 3D models of many physical objects. For example, our Stanford ...

- 8 Digital rights (and wrongs)
 Dennis Fowler
 June 2002 **netWorker**, Volume 6 Issue 2
 Publisher: ACM Press
 Full text available:  pdf(68.75 KB),  html(19.78 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

New legislation intended to resolve intellectual property issues only puts opposing viewpoints in stark relief

- 9 Business and legal issues: Vicarious infringement creates a privacy ceiling
 Janice Y. Tsai, Lorrie Faith Cranor, Scott Craver
 October 2006

Proceedings of the ACM workshop on Digital rights management DRM '06

Publisher: ACM Press

Full text available: pdf(231.24 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In high-tech businesses ranging from Internet service providers to e-commerce websites and music stores like Apple iTun-es, there is considerable potential for collecting personal information about customers, monitoring their usage habits, or even exerting control over their behavior - for example, restricting what can be done with a purchased song. A privacy ceiling is an effective limit to these privacy intrusions, created by the perceived or actual legal liability of possessing too much infor ...

Keywords: digital rights management, privacy

10 Data security and protection: Rights protection for relational data

Radu Sion, Mikhail Atallah, Sunil Prabhakar

June 2003

Proceedings of the 2003 ACM SIGMOD international conference on Management of data SIGMOD '03

Publisher: ACM Press

Full text available: pdf(229.76 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Protecting rights over relational data is of ever increasing interest, especially considering areas where sensitive, valuable content is to be outsourced. A good example is a data mining application, where data is sold in pieces to parties specialized in mining it. Different avenues for rights protection are available, each with its own advantages and drawbacks. Enforcement by legal means is usually ineffective in preventing theft of copyrighted works, *unless* augmented by a digital counter ...

11 Opportunities for watermarking standards

Fred Mintzer, Gordon W. Braudaway, Alan E. Bell

July 1998

Communications of the ACM, Volume 41 Issue 7

Publisher: ACM Press

Full text available: pdf(672.37 KB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)**12 Applications and compliance: Virtual monotonic counters and count-limited objects using a TPM without a trusted OS**

Luis F. G. Sarmenta, Marten van Dijk, Charles W. O'Donnell, Jonathan Rhodes, Srinivas Devadas

November 2006

Proceedings of the first ACM workshop on Scalable trusted computing STC '06

Publisher: ACM Press

Full text available: pdf(447.59 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

A trusted monotonic counter is a valuable primitive that enables a wide variety of highly scalable offline and decentralized applications that would otherwise be prone to replay attacks, including offline payment, e-wallets, virtual trusted storage, and digital rights management (DRM). In this paper, we show how one can implement a very large number of *virtual* monotonic counters on an untrusted machine with a Trusted Platform Module (TPM) or similar device, without relying on a trusted OS ...

Keywords: certified execution, e-wallet memory integrity checking, key delegation, stored-value, trusted storage

13 Data security and protection: Winnowing: local algorithms for document fingerprinting

Saul Schleimer, Daniel S. Wilkerson, Alex Aiken

June 2003

Proceedings of the 2003 ACM SIGMOD international conference on Management of data SIGMOD '03

Publisher: ACM Press

Full text available: pdf(180.16 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Digital content is for copying: quotation, revision, plagiarism, and file sharing all create copies. Document fingerprinting is concerned with accurately identifying copying, including small partial copies, within large sets of documents. We introduce the class of *local* document fingerprinting algorithms, which seems to capture an essential property of any finger-printing technique guaranteed to detect copies. We prove a novel lower bound on

the performance of any local algorithm. We also ...

14 Robust digital watermarking: Digital image watermarking using complex wavelet transform



Nataša Terzija, Walter Geisselhardt

September 2004 **Proceedings of the 2004 workshop on Multimedia and security MM&Sec '04**

Publisher: ACM Press

Full text available: pdf(713.64 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#), [review](#)

In this paper a new robust digital image watermarking method based on the Complex Wavelet Transform is presented. For improving its robustness features in the algorithm design the Error Correction Code is used. The technique is performed in spatial domain. The Complex wavelet transform is firstly used to adapt the watermark to the local image activity by using the visual masking. Secondly it is implemented to select the embedding space (embedding channels). The two embedding channels are obtained ...

Keywords: attacks, complex wavelet transform, image processing, robust algorithms, watermarking

15 Building a scalable and accurate copy detection mechanism



Narayanan Shivakumar, Hector Garcia-Molina

April 1996 **Proceedings of the first ACM international conference on Digital libraries DL '96**

Publisher: ACM Press

Full text available: pdf(921.24 KB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

16 Watermarking algorithms: Exploiting self-similarities to defeat digital watermarking systems: a case study on still images



Gwenaél Doërr, Jean-Luc Dugelay, Lucas Grangé

September 2004 **Proceedings of the 2004 workshop on Multimedia and security MM&Sec '04**

Publisher: ACM Press

Full text available: pdf(1.27 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Unauthorized digital copying is a major concern for multi-media content providers. Since copyright owners lose control over content distribution as soon as data is decrypted or unscrambled, digital watermarking has been introduced as a complementary protection technology. In an effort to anticipate hostile behaviors of adversaries, the research community is constantly introducing novel attacks to benchmark watermarking systems. In this paper, a generic block replacement attack will be presented. ...

Keywords: block replacement attack, intra-signal collusion, self-similarities

17 Comparing the usage of digital rights management systems in the music, film, and print industry



Marc Fetscherin, Matthias Schmid

September 2003 **Proceedings of the 5th international conference on Electronic commerce ICEC '03**

Publisher: ACM Press

Full text available: pdf(212.60 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The business of content providers is being threatened by technology advances in hardware, software and IP-networks such as the Internet or peer-to-peer file sharing systems. The result is an increasing amount of illegal copies available on-line as well as off-line. With the emergence of Digital Rights Management Systems (DRMS), the media and entertainment industry seems to have found the appropriate tool to simultaneously fight piracy and to monetize their assets. Although these systems are very ...

Keywords: digital content, digital content distribution, digital rights management, piracy, protection technologies

18 Copyrights and access-rights: Content and expression-based copy recognition for intellectual property protection



Özlem Uzuner, Randall Davis

October 2003 **Proceedings of the 3rd ACM workshop on Digital rights management DRM '03**

Publisher: ACM Press

Full text available: pdf(282.83 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Protection of copyrights and revenues of content owners in the digital world has been gaining importance in the recent years. This paper presents a way of fingerprinting text documents that can be used to identify content and expression similarities in documents, as a way of facilitating tracking of digital copies of works, to ensure proper compensation to content owners. The fingerprints we collected consist of surface, syntactic, and semantic features of documents. Because they reflect mostly h ...

Keywords: content and expression based copy recognition, copy recognition, distribution volume tracking, part-of-speech tagged features, semantic features, surface parsing, syntactic parsing

19 Digital village: Hiding data, forensics, and anti-forensics



Hal Berghel

April 2007 **Communications of the ACM**, Volume 50 Issue 4

Publisher: ACM Press

Full text available: pdf(413.95 KB)

Additional Information: [full citation](#), [abstract](#), [index terms](#)

html(25.11 KB)

Delving into the digital warrens for concealing data.

20 Watermarking maps: hiding information in structured data

Sanjeev Khanna, Francis Zane

February 2000 **Proceedings of the eleventh annual ACM-SIAM symposium on Discrete algorithms SODA '00**

Publisher: Society for Industrial and Applied Mathematics

Full text available: pdf(984.65 KB)

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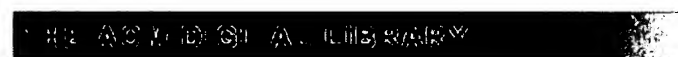


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Relevance scale ☐ ☐ ☐ ☐ ☐1 [How watermarking adds value to digital content](#)

John M. Acken

July 1998

Communications of the ACM, Volume 41 Issue 7

Publisher: ACM Press

Full text available: pdf(273.94 KB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)2 [Digital multimedia book: From digital audiobook to secure digital multimedia-book](#)

Lavinia Egidi, Marco Furini

July 2006

Computers in Entertainment (CIE), Volume 4 Issue 3

Publisher: ACM Press

Full text available: pdf(364.18 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Portable devices and wireless connections are creating a new scenario in which digital information is entering our lives in a massive way. In this article we consider MP3 audiobook applications and propose an approach to completely restyle the applications to the current mobile and multimedia scenario. Our mechanism introduces multimedia contents (images and text) into the audiobook application and synchronizes them with the MP3 audio stream. Multimedia contents are protected by a security system ...

Keywords: multimedia applications, multimedia communications, multimedia over wireless, music distribution

3 [Protecting digital media content](#)

Nasir Memon, Ping Wah Wong

July 1998

Communications of the ACM, Volume 41 Issue 7

Publisher: ACM Press

Full text available: pdf(1.02 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)4 [Opportunities for watermarking standards](#)

Fred Mintzer, Gordon W. Braudaway, Alan E. Bell

July 1998

Communications of the ACM, Volume 41 Issue 7

Publisher: ACM Press

Full text available: pdf(672.37 KB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#), [review](#)5 [Robust digital watermarking: Robust DWT-SVD domain image watermarking: embedding data in all frequencies](#)


Emir Ganic, Ahmet M. Eskicioglu

September 2004

Proceedings of the 2004 workshop on Multimedia and security MM&Sec

'04

Publisher: ACM Press

Full text available:  pdf(4.84 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Protection of digital multimedia content has become an increasingly important issue for content owners and service providers. As watermarking is identified as a major technology to achieve copyright protection, the relevant literature includes several distinct approaches for embedding data into a multimedia element (primarily images, audio, and video). Because of its growing popularity, the Discrete Wavelet Transform (DWT) is commonly used in recent watermarking schemes. In a DWT-based scheme, t ...

Keywords: copyright protection, discrete wavelet transform, image watermarking, multimedia, singular value decomposition, visual watermark

6 A secure multicast protocol with copyright protection



Hao-hua Chu, Lintian Qiao, Klara Nahrstedt, Hua Wang, Ritesh Jain

April 2002 **ACM SIGCOMM Computer Communication Review**, Volume 32 Issue 2

Publisher: ACM Press

Full text available:  pdf(301.97 KB)Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present a simple, efficient, and secure multicast protocol with copyright protection in an open and insecure network environment. There is a wide variety of multimedia applications that can benefit from using our secure multicast protocol, e.g., the commercial pay-per-view video multicast, or highly secure military intelligence video conference. Our secure multicast protocol is designed to achieve the following goals. (1) It can run in any open network environment. It does not rely on any sec ...


Keywords: copyright protection, key distribution, multicast security, watermark

7 A functional taxonomy for software watermarking

Jasvir Nagra, Clark Thomborson, Christian Collberg

January 2002 **Australian Computer Science Communications , Proceedings of the twenty-fifth Australasian conference on Computer science - Volume 4 ACSC '02**, Volume 24 Issue 1

Publisher: Australian Computer Society, Inc., IEEE Computer Society Press

Full text available:  pdf(1.19 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Despite the recent surge of interest in digital watermarking technology from the research community, we lack a comprehensive and precise terminology for software watermarking. In this paper, we attempt to fill that gap by giving distinctive names for the various protective functions served by software watermarks: Validation Mark, Licensing Mark, Authorship Mark and Fingerprinting Mark. We identify the desirable properties and specific vulnerabilities of each type of watermark, and we illustrate ...

Keywords: authentication, fingerprint, software authorship, software licensing, steganography, watermark

8 Watermarking algorithms: Exploiting self-similarities to defeat digital watermarking systems: a case study on still images



Gwenaél Doërr, Jean-Luc Dugelay, Lucas Grangé

September 2004 **Proceedings of the 2004 workshop on Multimedia and security MM&Sec '04**

Publisher: ACM Press

Full text available:  pdf(1.27 MB)Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

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Keywords: block replacement attack, intra-signal collusion, self-similarities

9 Marking and tracing methods: Tamper detection and localization for categorical data

using fragile watermarks

Yingjiu Li, Huiping Guo, Sushil Jajodia

October 2004 **Proceedings of the 4th ACM workshop on Digital rights management DRM '04**

Publisher: ACM Press

Full text available: pdf(150.74 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

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Keywords: database security, fragile watermarking, integrity10 Digital rights management for content distribution

Qiong Liu, Reihaneh Safavi-Naini, Nicholas Paul Sheppard

January 2003 **Proceedings of the Australasian information security workshop conference on ACSW frontiers 2003 - Volume 21 ACSW Frontiers '03**

Publisher: Australian Computer Society, Inc.

Full text available: pdf(224.63 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Transferring the traditional business model for selling digital goods linked to physical media to the online world leads to the need for a system to protect digital intellectual property. Digital Rights Management(DRM) is a system to protect high-value digital assets and control the distribution and usage of those digital assets. This paper presents a review of the current state of DRM, focusing on security technologies, underlying legal implications and main obstacles to DRM deployment with the ...

Keywords: DRM, digital content11 Biometrics, watermarking, IKE: A new content-based digital audio watermarking algorithm for copyright protection

Xiang-yang Wang, Yong-rui Cui, Hong-ying Yang, Hong Zhao

November 2004 **Proceedings of the 3rd international conference on Information security InfoSecu '04**

Publisher: ACM Press

Full text available: pdf(563.54 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Digital audio watermarking embeds inaudible information into digital audio data for the purposes of copyright protection, ownership verification, convert communication, and/or auxiliary data carrying. In this paper, we present a novel watermarking scheme to embed a meaningful gray image into digital audio by quantizing the wavelet coefficients (using integer lifting wavelet transform) of audio samples. Our audio-dependent watermarking procedure directly exploits temporal and frequency perceptual ...

Keywords: digital audio, digital watermarking, human auditory system, integer lifting wavelet transform, quantization12 Data security and protection: Rights protection for relational data

Radu Sion, Mikhail Atallah, Sunil Prabhakar

June 2003 **Proceedings of the 2003 ACM SIGMOD international conference on Management of data SIGMOD '03**


Publisher: ACM Press

Full text available: pdf(229.76 KB)


Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Protecting rights over relational data is of ever increasing interest, especially considering areas where sensitive, valuable content is to be outsourced. A good example is a data mining application, where data is sold in pieces to parties specialized in mining it. Different avenues for rights protection are available, each with its own advantages and drawbacks. Enforcement by legal means is usually ineffective in preventing theft of copyrighted works, unless augmented by a digital counter ...

13 Broadcast and on-line cultural heritage: Copyright protection and management and a

-  web based library for digital images of the Hellenic cultural heritage
Dimitris K. Tsolis, George K. Tsolis, Emmanouil G. Karatzas, Theodore S. Papatheodorou
November 2001 **Proceedings of the 2001 conference on Virtual reality, archeology, and cultural heritage VAST '01**

Publisher: ACM Press

Full text available:  [pdf\(358.69 KB\)](#)


Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The main issue addressed in this paper is the design and implementation of an Advanced Digital Image Repository, which offers specialized services and a Dedicated User Interface for the protection and management of the Intellectual Property Rights of digitized material. In addition, another main research area of this contribution is the implementation of a Web Based Library, supported by advanced technologies, for the proper presentation of the digital cultural content. The work described in thi ...


Keywords: copyright protection, databases, digital web archives, information systems, java applets, watermarking

- 14 Digital watermarking
 Minerva M. Yeung
July 1998 **Communications of the ACM**, Volume 41 Issue 7


Publisher: ACM Press

Full text available:  [pdf\(172.73 KB\)](#)

Additional Information: [full citation](#), [citations](#), [index terms](#)

- 15 Computer security: An additive-attack-proof watermarking mechanism for databases' copyrights protection using image
 Xiang Zhou, Min Huang, Zhiyong Peng
March 2007 **Proceedings of the 2007 ACM symposium on Applied computing SAC '07**


Publisher: ACM Press

Full text available:  [pdf\(235.84 KB\)](#)


Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper discusses the feasibility of embedding a bit map image (BMP file) into the relational databases for protecting data's copyrights and the term of WDI (Watermarking Databases using Image) is proposed. An error correction approach of BCH (Bose-Chaudhuri-Hocquenhem) coding is used for enhancing the robustness of the algorithms. And a Trusted Third Party (TTP), which can trigger watermarking mobile agents to insert and detect watermark, is introduced to resist the additive attack and in ...

Keywords: TTP, additive attack, invertibility attack, relational database, rights protection, watermarking

- 16 Watermarking techniques for intellectual property protection
 A. B. Kahng, J. Lach, W. H. Mangione-Smith, S. Mantik, I. L. Markov, M. Potkonjak, P. Tucker, H. Wang, G. Wolfe
May 1998 **Proceedings of the 35th annual conference on Design automation DAC '98**


Publisher: ACM Press

Full text available:  [pdf\(243.93 KB\)](#)


Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Digital system designs are the product of valuable effort and know-how. Their embodiments, from software and HDL program down to device-level netlist and mask data, represent carefully guarded intellectual property (IP). Hence, design methodologies based on IP reuse require new mechanisms to protect the rights of IP producers and owners. This paper establishes principles of watermarking-based IP protection, where a watermark is a mechanism for identificatio ...

Keywords: intellectual property test, system-on-chip test, testing embedded core

- 17 Security analysis II: Digital watermarking security considerations
 Rade Petrovic, Babak Tehrani, Joseph M. Winograd
September 2006 **Proceeding of the 8th workshop on Multimedia and security MM&Sec '06**

Publisher: ACM Press

Full text available:  [pdf\(253.62 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper, we review our past experience with security of copy control audio watermarks, particularly related to SDMI. We also classify and analyze attacks published in literature and propose a number of security enhancement techniques for copy control and other digital watermarking applications. One type of security measure is based on uncoordinated selection of hiding places between embedders and extractors, with statistical analysis of expected matches. This approach reduces the repeatability ...

Keywords: SDMI, copy control, digital rights management, digital watermarking, watermark attacks

18 Content protection: The advanced access content system's use of digital watermarking



Jeffrey Lotspiech

October 2006

Proceedings of the 4th ACM international workshop on Contents protection and security MCPS '06

Publisher: ACM Press

Full text available: pdf(83.08 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

The Advanced Access Content System (AACs) is the copy protection scheme for the new generation of high-definition DVD movies. Fundamentally, AACs is based on crypto-graphic principles. However, it has found a limited use for digital watermarking: first for playback control, and then, to a lesser extent, for forensics. This paper characterizes the forensic approach, and then describes AACs's "theatrical" and "consumer" watermarks and how they are used.

Keywords: AACs, broadcast encryption, content protection, encryption, piracy, revocation, tracing, watermarking

19 Behavioral synthesis techniques for intellectual property protection



Farinaz Koushanfar, Inki Hong, Miodrag Potkonjak

July 2005

ACM Transactions on Design Automation of Electronic Systems (TODAES),

Volume 10 Issue 3

Publisher: ACM Press

Full text available: pdf(439.81 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

We introduce dynamic watermarking techniques for protecting the value of intellectual property of CAD and compilation tools and reusable design components. The essence of the new approach is the addition of a set of design and timing constraints which encodes the author's signature. The constraints are selected in such a way that they result in a minimal hardware overhead while embedding a unique signature that is difficult to remove and forge. Techniques are applicable in conjunction with an ar ...

Keywords: Intellectual property protection, behavioral synthesis, watermarking

20 Information protection methods: Display-only file server: a solution against information theft due to insider attack



Yang Yu, Tzi-cker Chiueh

October 2004

Proceedings of the 4th ACM workshop on Digital rights management DRM '04

Publisher: ACM Press

Full text available: pdf(311.80 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Insider attack is one of the most serious cybersecurity threats to corporate America. Among all insider threats, information theft is considered the most damaging in terms of potential financial loss. Moreover, it is also especially difficult to detect and prevent, because in many cases the attacker has the proper authority to access the stolen information. According to the 2003 CSI/FBI Computer Crime and Security Survey, theft of proprietary information was the single largest category of loss ...

Keywords: access, digital rights management, information theft, insider attack

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A **watermark-based copy** management method for **digital media copy protection**, the method comprising the steps of: receiving an original media **data** set that ...
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Output copy protection - Patent 20070079130

If **protected digital data** is detected then authorized **data** is allowed to exit the ...
The **watermark** identifies the **digital** work as being **copy protected**. ...
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Method and apparatus for use of a time-dependent watermark for the ...

Method for embedding and reading **watermark**-information in **digital** form, ... means for outputting said **data** stream, and wherein the **copy protection** system ...
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Copy protection for digital motion picture image data - US Patent ...

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Watermark Standardization for DVD Copy Protection

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Copy protection or "anti-copy" is the use of technology to prevent the copying of analog or **digital data**. By this definition, trying to make uncrackable ...
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Digital rights management - Wikipedia, the free encyclopedia

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High-bandwidth Digital Content Protection - Wikipedia, the free ...

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Crypto-Gram: May 15, 2001

All **digital copy protection** schemes can be broken, and once they are, the breaks will be **Encryption**. Install an e-mail and file encryptor (like PGP). ...

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The Futility of Digital Copy Prevention

CSS is an **encryption** scheme, and protects DVDs by encrypting their contents. ...

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DMCA and the politics of copy protection@Everything2.com

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Data Encryption Systems Limited - Solutions for software **copy protection**, ...

HexaLock Ltd. - Develops and markets **digital copy protection** solutions that ...

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EFF: Digital Rights Management and Copy Protection Schemes Archive

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copy protection: Definition and Much More from Answers.com

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also analyzed IS-POD-CP-INT03 for the **copy protection** 131. In accordance with the analysis result, **Encryption** module in. DES-ECB mode has been designed by ...

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(CATV) system and the other consumer electronic devices. The OpenCable system seeks STREAM FILTER. REMULTIPLEXER. DES. **ENCRYPTION**. **COPY PROTECTION** ...

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Because the CP scrambling is performed for the purpose of **copy protection**, ...

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[SELECTIVE INACTIVATION AND COPY-PROTECTION - Patent EP1352520](#)

DOD services having **copy protection** in accordance with one embodiment of the ...

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